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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/598,156	04/10/2007	Christopher James Newton Fryer	1788.004.US	1688
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Multi-Fineline Electronix, Inc. c/o Keating & Bennett, LLP 1800 Alexander Bell Drive Suite 200 Reston, VA 20191			EXAMINER FRY, MATTHEW A	
			ART UNIT 2629	PAPER NUMBER
			NOTIFICATION DATE 10/14/2011	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

uspto@kbiplaw.com  
jkeating@kbiplaw.com

**Office Action Summary****Application No.**

10/598,156

**Applicant(s)**

FRYER ET AL.

**Examiner**

MATTHEW FRY

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 August 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on \_\_\_\_; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 5) ☒ Claim(s) 1-7 and 13-16 is/are pending in the application.
- 5a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 6) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 7) ☒ Claim(s) 1-7 and 13-16 is/are rejected.
- 8) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 9) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-SB-03)  
Paper No(s) Mail Date 6/23/11
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s) Mail Date \_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed 8/1/11 have been fully considered but they are not persuasive.
2. Applicant argues (Remarks pages 9-10) that Herbert fails to teach the limitations in amended claim 1 (and similarly 13). Applicant specifically identifies a first electrode, second electrode and third electrode that are not taught by Herbert. However (while further detail is provided in the art rejection below) Herbert teaches a first electrode (16), and second electrode (18, figure 1) and a third electrode (ground electrode of C2; figure 12).
3. Applicant's arguments with respect to claims 14-16 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 3, and 5-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Herbert (US 5,777,596).
6. In regards to claim 1, Herbert discloses a display comprising:  
A first electrode (16) that is a front most electrode of the display (figure 1);

At least one second electrode (18) arranged opposite to the first electrode (figure 1), the first electrode and the at least one second electrode activate an area of the display after the display has been activated (Col 4, lines 6-24); and

a capacitance sensor (38), arranged to detect a presence of a user (Col 7, lines 42-55; figure 11), and including:

a third electrode (ground electrode of capacitor C2; figure 12), different from the at least one second electrode that is one of:

a case of the display; and

a power electrode (ground) of a circuit that is arranged to drive or control the display (figure 12); wherein

the capacitance sensor also includes the first electrode; and

the first electrode is also a sensing electrode of the capacitance sensor to detect the presence of the user (Col 2, lines 31-56; Col 5, lines 31-56).

7. In regards to claim 3, Herbert discloses a display according to claim 1, in which the capacitance sensor further includes electronics (38) arranged to measure the capacitance between the first electrode and the third electrode and to output a signal based upon the measurement of the capacitance (see figures 5-6 and 11-12; abstract; Col 2, lines 31-56; Col 4, lines 6-23; Col 5, lines 32-38). Figure 12 shows capacitors C1 and C2. Inherently there exists a capacitance between the first electrode (top electrode of C1) and third electrode (bottom electrode of C2). Col 6, lines 30-48 describe circuit 38 for measuring the capacitive charge time for line 37. Col 5, lines 32-38 discusses the capacitance is related to the charge time of the capacitive circuit. Thus circuit 38 is

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measuring the capacitance on line 37, which includes the capacitance between 1<sup>st</sup> and 3<sup>rd</sup> electrodes.

8. In regards to claim 5, Herbert discloses a display according to claim 3, further comprising circuitry (display control device) arranged to activate the display based upon the signal (Col 9, lines 13-32).

9. In regards to claim 6, Herbert discloses a display according to claim 1, in which the power electrode is a ground electrode (see figure 12).

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claims 2, 4, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Herbert (US 5,777,596) in view of Nakazono et al (JP9251820).

12. In regards to claim 2, Herbert discloses a display according to claim 1, but does not explicitly teach an EL display.

Nakazono teaches a display comprising an electroluminescent display capable of detecting a touch (abstract).

It would have been obvious to one of ordinary skill in the art to modify Herbert with Nakazono as EL displays are well known in the art. Further, both

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inventions are in the same field of endeavor, providing a touch screen where both the display and sensor share electrodes, and both an LC display and an EL display function in similar capacitive manners.

13. In regards to claim 4, Herbert as modified discloses a display according to claim 2, in which the first electrode is arranged to activate light- emitting areas of the electroluminescent display (see Nakazono abstract).

14. In regards to claim 13, Herbert discloses a display comprising:

A first electrode (16) that is a front most electrode of the display (figure 1);

At least one second electrode (18) arranged opposite to the first electrode (figure 1), the first electrode and the at least one second electrode activate an area of the display after the display has been activated (Col 4, lines 6-24); and

a capacitance sensor (38) (Col 7, lines 42-55; figure 11) including:

a third electrode (ground electrode of capacitor C2; figure 12), different from the at least one second electrode that is one of:

a case of the display; and

a power electrode (ground) of a circuit that is arranged to drive or control the display (figure 12); wherein

the capacitance sensor also includes the first electrode; and

the first electrode is also a sensing electrode of the capacitance sensor to detect the presence of the user (Col 2, lines 31-56; Col 5, lines 31-56); and

electronics (38) arranged to:

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measure the capacitance between the first electrode and the third electrode to determine a presence of a user (see figures 5-6 and 11-12; abstract; Col 2, lines 31-56; Col 4, lines 6-23; Col 5, lines 32-38);

provide a signal based upon the determination of the presence of a user; and activate the display based on the signal ((display control device) Col 9, lines 13-32).

Figure 12 shows capacitors C1 and C2. Inherently there exists a capacitance between the first electrode (top electrode of C1) and third electrode (bottom electrode of C2). Col 6, lines 30-48 describe circuit 38 for measuring the capacitive charge time for line 37. Col 5, lines 32-38 discusses the capacitance is related to the charge time of the capacitive circuit. Thus circuit 38 is measuring the capacitance on line 37, which includes the capacitance between 1<sup>st</sup> and 3<sup>rd</sup> electrodes. Herbert does not explicitly disclose an EL display.

Nakazono teaches a display comprising an electroluminescent display capable of detecting a touch (abstract).

It would have been obvious to one of ordinary skill in the art to modify Herbert with Nakazono as EL displays are well known in the art. Further, both inventions are in the same field of endeavor, providing a touch screen where both the display and sensor share electrodes, and both an LC display and an EL display function in similar capacitive manners.

15. Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Herbert (US 5,777,596) in view of Tsunoda et al (US 4,592,031).

16. In regards to claim 14, Herbert discloses a display comprising: a capacitance sensor (38) arranged to detect a presence of a user and including a first electrode (16) that is front electrode of the display (see figure 5 and 6; abstract; Col 2, lines 31-56; Col 4, lines 6-23; Col 5, lines 32-38). Herbert does not explicitly disclose a protection member.

Tsunoda teaches a protection diode (D) arranged to protect a circuit (Decoder 24a) from an excessive voltage (inherent to the diode as it only allows current flow in one direction) on an electrode of a capacitor (C) and including:

A first end connected to an electrode of the capacitor and a second end connected to a circuit element (24a) (figure 11).

It would have been obvious to one of ordinary skill in the art to modify Herbert with Tsunoda such that a diode is placed between column line 37 and column line driver 34 (figure 11). Herbert as modified would have a diode with a first end connected to the front electrode (16) of the display (figure 1) and a second end connected to at least one circuit element (40) of the capacitance sensor (figure 11). Diodes are well known in the art and are commonly used to prevent reverse current flow (evidenced by Tsunoda Col 15, lines 4-12); as such it would have been obvious for one of ordinary skill in the art to modify Herbert with Tsunoda.

17. In regards to claim 15, Herbert as modified discloses a display according to claim 14, wherein:

The display further includes at least one second electrode (18) arranged opposite to the first electrode (figure 1), the first electrode and the at least one



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second electrode activate an area of the display after the display has been activated (Col 4, lines 6-24); and

a capacitance sensor (38) (Col 7, lines 42-55; figure 11) including:

a third electrode (ground electrode of capacitor C2; figure 12), different from the at least one second electrode that is one of:

a case of the display; and

a power electrode (ground) of a circuit that is arranged to drive or control the display (figure 12); and the front electrode defines a single electrode that is used both as a display electrode arranged to activate the display and as a sensing electrode of the capacitance sensor to detect the presence of the user (see Herbert figure 4; Col 6, lines 19-30, 35-43; Col 7, line 60- Col 8, line 17).

18. In regards to claim 16, Herbert as modified discloses a display according to Claim 14, wherein the first electrode is used both as display electrode arranged to activate the display and as a sensing electrode of the capacitance sensor to detect the presence of the user (see Herbert figure 4; Col 6, lines 19-30, 35-43; Col 7, line 60- Col 8, line 17).

19. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Herbert (US 5,777,596) in view of Nakazono et al (JP9251820) and further in view of Tsunoda et al (US 4,592,031).

20. In regards to claim 7, Herbert as modified discloses a display according to claim 5, but does not explicitly disclose a diode.

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Tsunoda teaches a diode (118) is arranged to protect a circuit (decoder 24a) (figure 11).

It would have been obvious to one of ordinary skill in the art to modify Herbert with Tsunoda such that a diode is placed between column line 37 and column line driver 34 (figure 11). Herbert as modified would have a diode that protects either the capacitance sensor (38) or the circuitry arranged to activate the display (36). Diodes are well known in the art and are commonly used to prevent reverse current flow (evidenced by Tsunoda Col 15, lines 4-12); as such it would have been obvious for one of ordinary skill in the art to modify Herbert with Tsunoda.

### ***Conclusion***

21. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MATTHEW FRY whose telephone number is (571)270-7355. The examiner can normally be reached on Monday thru Friday, 8:00 AM to 5:00 PM, alternate Fridays, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (571) 272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MATTHEW A FRY/  
Examiner, Art Unit 2629

/Bipin Shalwala/  
Supervisory Patent Examiner, Art Unit 2629